```
DATE FILED: Dec. 13, 1994
ART-UNIT: 125
PRIM-EXMR: Zohreh Fay
LEGAL-REP: Jeffrey S. Schira
FILE 'USPAT' ENTERED AT 19:19:16 ON 02 JUL 1997
                   WELCOME TO THE
             U.S. PATENT TEXT FILE
                                                                                                                                                                US PAT NO: 5,621,102 [IMAGE AVAILABLE]
DATE ISSUED: Apr. 15, 1997
                                                                                                                                                                                                                                                              L3: 6 of 93
=> s (platelet derived growth factor#) or pdgf
10509 PLATELET
                                                                                                                                                                                    Process for preparing enantiomerically pure xanthine
                                                                                                                                                                TITLE:
                                                                                                                                                                derivatives
INVENTOR: James A. Bianco, Seattle, WA
         284821 DERIVED
        123324 GROWTH
381215 FACTOR#
                                                                                                                                                                                Paul Woodson, Bothell, WA
David Porubek, Edmonds, WA
Jack Singer, Seattle, WA
           1057 PLATELET DERIVED GROWTH FACTOR#
(PLATELET(W)DERIVED(W)GROWTH(W)FACTOR#)
                                                                                                                                                                ASSIGNEE: Cell Therapeutics, Inc., Seattle, WA (U.S. corp.)
APPL-NO: 08/456,897
                                                                                                                                                                APPL-NO: 08/456,897
DATE FILED: Jun. 1, 1995
             1245 (PLATELET DERIVED GROWTH FACTOR#) OR PDGF
                                                                                                                                                                ART-UNIT: 123
PRIM-EXMR: Alan L. Rotman
LEGAL-REP: Stephen Faciszewski
=> s homodimer or AA
337 HOMODIMER
          21018 AA
           21300 HOMODIMER OR AA
                                                                                                                                                                US PAT NO: 5,620,984 [IMAGE AVAILABLE] L3: 7 of 93
DATE ISSUED: Apr. 15, 1997
TITLE: Enatiomerically pure hydroxylated xanthine compounds to
                                                                                                                                                                                                                                                               L3: 7 of 93
 => s I1 (2a) I2
              93 L1 (2A) L2
                                                                                                                                                                treat inflammatory diseases
INVENTOR: James A. Bianco, Seattle, WA
 => d bib 1-
                                                                                                                                                                                 Paul Woodson, Bothell, WA
                                                                                                                                                                                David Porubek, Edmonds, WA
Jack Singer, Seattle, WA
US PAT NO: 5,644,026 [IMAGE AVAILABLE] L3: 1 of 93

DATE ISSUED: Jul. 1, 1997

TITLE: Epitaxin, a cell motility factor
INVENTOR: Yu Yamaguchi, San Diego, CA
Motoyuki Shimonaka, San Diego, CA
ASSIGNEE: La Jolla Cancer Research Foundation, Ja Jolla, CA (U.S.
                                                                                                                                                                 ASSIGNEE: Cell Therapeutics, Inc., Seattle, WA (U.S. corp.)
APPL-NO: 08/456,898
                                                                                                                                                                 ASPILAD.
OB/456,898
DATE FILED: Jun. 1, 1995
ART-UNIT: 125
PRIM-EXMR: Theodore J. Criares
LEGAL-REP: Stephen Faciszewski, Jeffrey B. Oster
ASSIGNEE: La Joila Cancer Researc
corp.)
APPL-NO: 08/237,280
DATE FILED: May 3, 1994
ART-UNIT: 181
PRIM-EXMR: Cecilia J. Tsang
ASST-EXMR: Anish Gupta
LEGAL-REP: Campbell & Flores LLP
                                                                                                                                                                 US PAT NO: 5,620,687 [IMAGE AVAILABLE] L3: 8 of 93
DATE ISSUED: Apr. 15, 1997
TITLE: Inhibition of intimal hyperplasia using antibodies to PDGF
                                                                                                                                                                 beta receptors
INVENTOR: Charles E. Hart, Brier, WA
                                                                                                                                                                 INVENTOR: Charles E. Hart, Brier, WA
Richard D. Kenagy, Seattle, WA
Alexander W. Clowes, Seattle, WA
ASSIGNEE: ZymoGenetics, Inc., Seattle, WA (U.S. corp.)
University of Washington, Seattle, WA (U.S. corp.)
 US PAT NO: 5,629,315 [IMAGE AVAILABLE]
DATE ISSUED: May 13, 1997
                                                                                               L3: 2 of 93
                   Treatment of diseases using enantiomerically pure hydroxylated xanthine compounds
                                                                                                                                                                 APPL-NO: 08/368,860

DATE FILED: Dec. 30, 1994

ART-UNIT: 186

PRIM-EXMR: Christina Y. Chan

ASST-EXMR: Phillip Gambel

LEGAL-REP: Gary E. Parker, Debra K. Leith, Deborah A. Sawislak
                 Paul Woodson, Bothell, WA
David Porubek, Edmonds, WA
  INVENTOR:
  Jack Singer, Seattle, WA
ASSIGNEE: Cell Therapeutics, Inc., Seattle, WA (U.S. corp.)
APPL-NO: 08/456,900
 DATE FILED: Un. 1, 1995
ART-UNIT: 125
PRIM-EXMR: Theodore J. Criares
LEGAL-REP: Stephen Faciszewski
                                                                                                                                                                 US PAT NO: 5,618,837 [IMAGE AVAILABLE]
DATE ISSUED: Apr. 8, 1997
TITLE: PDGF antagonists III
INVENTOR: Charles E. Hart, Brier, WA
Oliver J. McConnell, Wayne, PA
Robert R. West, Seattle, WA
Theresa Martinez, Greenbank, WA
                                                                                                                                                                                                                                                                L3: 9 of 93
 US PAT NO: 5,629,286 [IMAGE AVAILABLE] L3: 3 of 93
DATE ISSUED: May 13, 1997
TITLE: Homeopathic dilutions of growth factors
INVENTOR: Barbara Brewitt, 5557 - 36th Ave. NE., Seattle, WA
                                                                                                                                                                  ASSIGNEE: ZymoGenetics, Inc., Seattle, WA (U.S. corp.)
APPL-NO: 08/483,216
DATE FILED: Jun. 7, 1995
ART-UNIT: 125
PRIM-EXMR: Kimberly Jordan
LEGAL-REP: Gary E. Parker, Debra K. Leith, Deborah A. Sawislak
  APPL-NO: 08710,040
DATE FILED: Sep. 10, 1996
ART-UNIT: 338
PRIM-EXMR: Robert A. Hafer
   ASST-EXMR:
                              Chalin Smith
   LEGAL-REP: Ann W. Speckman, Janet Sleath
                                                                                                                                                                  US PAT NO: 5,618,678 [IMAGE AVAILABLE] L3: 10 of 93
DATE ISSUED: Apr. 8, 1997
TITLE: Methods for detecting PDGF agonist or antagonist activity
  US PAT NO: 5,626,617 [IMAGE AVAILABLE]
DATE ISSUED: May 6, 1997
                                                                                                                                                                  TITLE: Methods for detecting PDGF agonist or antagonis using PDGF. alpha.

INVENTOR: James D. Kelly, Seattle, WA
ASSIGNEE: ZymoGenetics, Inc., Seattle, WA (U.S. corp.)
APPL-NO: 08/340,754
DATE FILED: Nov. 16, 1994
ART-UNIT: 182
PRIM-EXMR: Stephen G. Walsh
ASST-EXMR: Sally P. Teng
LEGAL-REP: Townsend and Townsend and Crew
                                                                                                 L3: 4 of 93
                     Methods for treating disorders by administering radio
                    frequency signals corresponding to growth factors

R: Barbara Brewitt, 6812 Woodlawn Ave. NE., Seattle, WA
   INVENTOR:
  LEGAL-REP: Ann W. Speckman, Janet Sleath
                                                                                                                                                                   US PAT NO: 5,612,349 [IMAGE AVAILABLE]
DATE ISSUED: Mar. 18, 1997
                                                                                                                                                                                                                                                                  L3: 11 of 93
   US PAT NO: 5,624,893 [IMAGE AVAILABLE]
DATE ISSUED: Apr. 29, 1997
                                                                                                                                                                                     Enantiomerically pure hydroxylated xanthine compounds to
                                                                                                                                                                   treat shock symptoms
INVENTOR: James A. Bianco, Seattle, WA
                      Pharmaceutical compositions and methods of treatment of
   the cornea following laser irradiation

INVENTOR:
ASSIGNEE:
APPL-NO:
08/355,481
                                                                                                                                                                                  Paul Woodson, Bothell, WA
David Porubek, Edmonds, WA
```

Jack Singer, Seattle, WA

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APPL-NO: 08/456,899
DATE FILED: Jun. 1, 1995
ART-UNIT: 125
PRIM-EXMR: Theodore J. Criares
LEGAL-REP: Jeffrey B. Oster
ASSIGNEE: Cell Therapeutics, Inc., Seattle, WA (U.S. corp.)
APPL-NO: 08/457,062
APPL-NO: US/457,US/2
DATE FILED: Jun. 1, 1995
ART-UNIT: 125
PRIM-EXMR: Theodore J. Criares
LEGAL-REP: Stephen Faciszewski
                                                                                                                                                                                                                                        US PAT NO: 5,567,704 [IMAGE AVAILABLE]
DATE ISSUED: Oct. 22, 1998
                                                                                                                                                                                                                                                                                                                                                                                L3: 18 of 93
US PAT NO: 5,605,816 [IMAGE AVAILABLE] L3: 12 of 93
DATE ISSUED: Feb. 25, 1997
TITLE: Recombinant DNA encoding PDGF A-chain polypeptides
INVENTOR: Carl-Henrik Heldin, Uppsala, Sweden
                                                                                                                                                                                                                                                                  R-enatiomerically pure hydroxylated xanthine compounds to
                                                                                                                                                                                                                                                                 treat baldness
                                                                                                                                                                                                                                                              DR: James A. Bianco, Seattle, WA
Paul Woodson, Bothell, WA
David Porubek, Edmonds, WA
                                                                                                                                                                                                                                        INVENTOR:
                        Christer Betsholtz, Uppsala, Sweden
Bengt Westermark, Uppsala, Sweden
Timothy J. Knott, London, England
                                                                                                                                                                                                                                        Jack Singer, Seattle, WA
ASSIGNEE: Cell Therapeutics, Inc., Seattle, WA (U.S. corp.)
APPL-NO: 08/457,683
Timothy J. Knott, London, England
James Scott, Harrow, United Kingdom
Graeme I. Bell, San Francisco, CA

ASSIGNEE: Chiron Corporation, Emeryville, CA (U.S. corp.)
APPL-NO: 08/454,425

DATE FILED: May 30, 1995
ART-UNIT: 182

PRIM-EXMR: Marianne P. Allen
LEGAL-REP: Roberta L. Robins, Amy L. Collins, Robert P. Blackburn
                                                                                                                                                                                                                                        APPL-NO: 06/457,665
DATE FILED: Jun. 1, 1995
ART-UNIT: 125
PRIM-EXMR: Theodore J. Criares
LEGAL-REP: Jeffrey B. Oster
                                                                                                                                                                                                                                        US PAT NO: 5,567,584 [IMAGE AVAILABLE] L3: 19 of 93

DATE ISSUED: Oct. 22, 1996

TITLE: Methods of using biologically active dimerized polypeptide fusions to detect PDGF

INVENTOR: Andreg Z. Sledziewski, Seattle, WA

Lillian A. Bell, Seattle, WA

Wayne R. Kindsvogel, Seattle, WA

ASSIGNEE: Zymogenetics Lo. Seattle WA (LS com)
  US PAT NO: 5,595,722 [IMAGE AVAILABLE] L3: 13 of 93
DATE ISSUED: Jan. 21, 1997
TITLE: Method for identifying an agent which increases TGF-beta
 INVENTOR:

Jawes C. Metcalfe, Cambridge, England

ASSIGNEE:
APPL-NO:
DATE FILED:
ART-UNIT:
LEGAL-REP:

David J. Grainger, Cambridge, England
NeoRx Corporation, Seattle, WA (U.S. corp.)
08/476,735
08/476,735
125
PRIM-EXMR:
125
PRIM-EXMR:
LEGAL-REP:
Schwegman, Lundberg, Woessner & Kluth, P.A.
                            levels
                                                                                                                                                                                                                                         ASSIGNEE: Zymogenetics, Inc., Seattle, WA (U.S. corp.)
APPL-NO: 08/180,195
DATE FILED: Jan. 11, 1994
ART-UNIT: 182
PRIM-EXMR: John Ulm
LEGAL-REP: Seed and Berry LLP
                                                                                                                                                                                                                                         US PAT NO: 5,565,519 [IMAGE AVAILABLE] L3: 20 of 93
DATE ISSUED: Oct. 15, 1996
TITLE: Clear, chemically modified collagen-synthetic polymer conjugates for ophthalmic applications
INVENTOR: Woonza M. Rhee, Palo Alto, CA
Prema R. Rao, Los Gatos, CA
                                                                                                                                                                                                                                                                                                                                                                                  13:20 of 93
  US PAT NO: 5,591,453 [IMAGE AVAILABLE] L3: 14
DATE ISSUED: Jan. 7, 1997
TITLE: Incorporation of biologically active molecules into
                                                                                                                                           L3: 14 of 93
  INVENTOR: Paul Ducheyne, Rosemont, PA
Shulamith Radin, Voorhees, NJ
Erick M. Santos, Philadelphia, PA
ASSIGNEE: The Trustees of the University of Pennsylvania,
                                                                                                                                                                                                                                         Prema R. Rao, Los Gatos, CA
George H. Chu, Cupertino, CA
Frank A. Del. ustro, Belmont, CA
ASSIGNEE: Collagen Corporation, Palo Alto, CA (U.S. corp.)
APPL-NO: 08/147,227
DATE FILED: Nov. 3, 1993
ART-UNT: 153
PRIM-EXMR: Nathan M. Nutter
LEGAL-REP: Kathi Rafayko, Shirley L. Church
                          Philadelphia, PA (U.S. corp.)
  APPL-NO: 08/477,585
DATE FILED: Jun. 7, 1995
ART-UNIT: 151
PRIM-EXMR: Amy Hulina
LEGAL-REP: Woodcock Washburn Kurtz Mackiewicz & Norris
                                                                                                                                                                                                                                          US PAT NO: 5,563,173 [IMAGE AVAILABLE]
DATE ISSUED: Oct. 8, 1996
TITLE: Anti-proliferative effects of sodium butyrate
INVENTOR: Frank M. Yatsu, Houston, TX
                                                                                                                                                                                                                                                                                                                                                                                   L3: 21 of 93
  US PAT NO: 5,585,270 [IMAGE AVAILABLE] L3: 15 of 93

DATE ISSUED: Dec. 17, 1998

ITILE: Polynucleotides encoding connective tissue growth factor INVENTOR: Gary R. Grotendorst, Lutz, FL
Douglass M. Bradham, Jr., Baltimore, MD

ASSIGNEE: University of South Florida, Tampa, FL (U.S. corp.)

APPL-NO: 08/386,680

DATE FILED: Feb. 10, 1995

ART-UNIT: 182

PRIM-EXMR: John Ulm

ASST-EXMR: Lorraine M. Spector

LEGAL-REP: Fish & Richardson P.C.
                                                                                                                                                                                                                                           Kasturi Ranganna, Houston, TX
ASSIGNEE: Research Development Foundation, Carson City, NV (U.S.
                                                                                                                                                                                                                                          corp.)
APPL-NO: 08/362,829
DATE FILED: Dec. 22, 1994
ART-UNIT: 125
                                                                                                                                                                                                                                            PRIM-EXMR: Marianne M. Cintins
ASST-EXMR: William R.A. Jarvis
LEGAL-REP: Benjamin Aaron Adler
                                                                                                                                                                                                                                          US PAT NO: 5,550,188 [IMAGE AVAILABLE] L3: 22 of DATE ISSUED: Aug. 27, 1996
TITLE: Polymer conjugates ophthalmic devices comprising collagen-polymer conjugates
INVENTOR: Woonza Rhee, Palo Alto, CA
Donald G. Wallace, Menlo Park, CA
                                                                                                                                                                                                                                                                                                                                                                                    1.3: 22 of 93
     US PAT NO: 5,580,874 [IMAGE AVAILABLE]
                                                                                                                                             L3: 16 of 93
    US PAT NO: 5,500,674 [Initides AVAILABLE]
DATE ISSUED: Dec. 3, 1998
TITLE: Enatiomerically pure hydroxylated xanthine compounds INVENTOR: James A. Bianco, Seattle, WA
Paul Woodson, Bothell, WA
David Porubek, Edmonds, WA
                                                                                                                                                                                                                                                                   Alan S. Michaels, Boston, MA
Ramon A. Burns, Jr., Fremont, CA
Louis Fries, Los Altos, CA
    Jack Singer, Seattle, WA
ASSIGNEE: Cell Therapeutics, Inc., Seattle, WA (U.S. corp.)
08/457,685
DATE FILED: Jun. 1, 1995
ART-UNIT: 125
PRIM-EXMR: Theodore J. Criares
LEGAL-REP: Stephen Faciszewski
                            Jack Singer, Seattle, WA
                                                                                                                                                                                                                                           Louis Fries, Los Altos, CA
Frank DeLustro, Belmont, CA
Hanne Bentz, Newark, CA
ASSIGNEE: Collegen Corporation, Palo Alto, CA (U.S. corp.)
APPL-NO: 08/478,510
DATE FILED: Jun. 7, 1995
ART-UNIT: 127
PRIM-EXMR: Nathan M. Nutter
LEGAL-REP: Morrison & Foerster
                                                                                                                                              L3: 17 of 93
      US PAT NO: 5,580,873 [IMAGE AVAILABLE]
      US PAT NO: 5,380,673 [IMMGE AVAILABLE]

DATE ISSUED: Dec. 3, 1998

TITLE: Enatiomerically pure hydroxylated xanthine compounds to treat proliferative vascular diseases

INVENTOR: James A. Bianco, Seattle, WA
Paul Woodson, Bothell, WA
                                                                                                                                                                                                                                             US PAT NO: 5,545,569 [IMAGE AVAILABLE]
                                                                                                                                                                                                                                                                                                                                                                                     L3: 23 of 93
                                                                                                                                                                                                                                             DATE ISSUED: Aug. 13, 1996
                                                                                                                                                                                                                                                               Prevention and treatment of pathologies associated with abnormally proliferative smooth muscle cells
                             David Porubek, Edmonds, WA
      Jack Singer, Seattle, WA
ASSIGNEE: Cell Therapeutics, Inc., Seattle, WA (U.S. corp.)
                                                                                                                                                                                                                                                                                David J. Grainger, Cambridge, United Kingdom
```

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LEGAL-REP: Banner & Allegretti, Ltd.
                   James C. Metcalfe, Cambridge, United Kingdom
Peter L. Weissberg, Cambridge, United Kingdom
ASSIGNEE: NeoRx Corporation, Seattle, WA (U.S. corp.)
APPL-NO: 08/450,520
                                                                                                                                                                                                            US PAT NO: 5,510,418 [IMAGE AVAILABLE] L3: 29
DATE ISSUED: Apr. 23, 1996
TITLE: Glycosaminoglycan-synthetic polymer conjugates
INVENTOR: Woonza M. Rhee, Palo Alto, CA
                                                                                                                                                                                                                                                                                                                                       1.3: 29 of 93
APPC-NO.

Odate FILED:

May 25, 1995

ART-UNIT:

125

PRIM-EXMR:

Reymond Henley, III

Schwegman, Lundberg, Woessner & Kluth, P.A.
                                                                                                                                                                                                             Richard A. Berg, Los Altos, CA
ASSIGNEE: Collagen Corporation, Palo Alto, CA (U.S. corp.)
APPL-NO: 08/148,843
                                                                                                                                                                                                             APPL-NO: 08/146,843

DATE FILED: Nov. 3, 1993

ART-UNIT: 153

PRIM-EXMR: Nathan M. Nutter

LEGAL-REP: Kathi Rafayko, Shirley L. Church
US PAT NO: 5,543,441 [IMAGE AVAILABLE] L3: 24 (
DATE ISSUED: Aug. 6, 1996

TITLE: Implants coated with collagen-polymer conjugates
INVENTOR: Woonza Rhee, Palo Alto, CA
Donald G. Wallace, Menlo Park, CA
                                                                                                                         L3: 24 of 93
                    Alan S. Michaels, Boston, MA
Ramon A. Burns, Jr., Fremont, CA
Louis Fries, Los Altos, CA
                                                                                                                                                                                                              US PAT NO: 5,510,121 [IMAGE AVAILABLE]
DATE ISSUED: Apr. 23, 1996
                                                                                                                                                                                                                                                                                                                                       L3: 30 of 93
                                                                                                                                                                                                             ITILE: Glycosaminoglycan-synthetic polymer conjugates
INVENTOR: Woonza M. Rhee, 3845 LaDonna Ave., Palo Alto, CA 94306
Richard A. Berg, 660 S. Springer Rd., Los Altos, CA 94024
APPL-NO: 08/434,958
DATE FILED: May 4, 1995
                    Frank DeLustro, Belmont, CA
Hanne Bentz, Newark, CA
ASSIGNEE: Collagen Corporation, Palo Alto, CA (U.S. corp.)
APPL-NO: 08/427,576
DATE FILED: Apr. 24, 1995
ART-UNIT: 127
PRIM-EXMR: Nathan M. Nutter
LEGAL-REP: Morrison & Foerster
                                                                                                                                                                                                              ART-UNIT: 127
PRIM-EXMR: Nathan M. Nutter
                                                                                                                                                                                                             US PAT NO: 5,508,030 [IMAGE AVAILABLE] L3: 3
DATE ISSUED: Apr. 16, 1996
TITLE: Creating new capillary blood pools for practicing bidirectional medicine
                                                                                                                                                                                                                                                                                                                                        L3: 31 of 93
US PAT NO: 5,533,836 [IMAGE AVAILABLE] L3: 25 of 93
DATE ISSUED: Jul. 9, 1996
TITLE: Compositions and methods for stimulating the growth of
                                                                                                                                                                                                               INVENTOR: Howard R. Bierman, 150 N. Robertson Blvd., Ste. 314, Beverly Hills, CA 90211
                       osteoplasts
                                 Emma E. Moore, Seattle, WA
ZymoGenetics, Inc., Seattle, WA (U.S. corp.)
INVENTOR:
ASSIGNEE:
                                                                                                                                                                                                              APPL-NO: 08/102,448
DATE FILED: Aug. 5, 1993
ART-UNIT: 181
PRIM-EXMR: LEGAL-REP: Albert M. Herzig
                              08/408,331
APPL-NO: 08/408,331
DATE FILED: Mar. 22, 1995
ART-UNIT: 181
PRIM-EXMR: Howard E. Schain
LEGAL-REP: Deborah A. Sawislak
                                                                                                                                                                                                               US PAT NO: 5,504,103 [IMAGE AVAILABLE]
DATE ISSUED: Apr. 2, 1996
 US PAT NO: 5,523,348 [IMAGE AVAILABLE]
DATE ISSUED: Jun. 4, 1996
                                                                                                                          L3: 26 of 93
                                                                                                                                                                                                                                        Inhibition of phosphatidylinositol 3-kinase with 17
                                                                                                                                                                                                               .beta.-hydroxywortmannin and analogs thereof INVENTOR: Rosanne Bonjouklian, Zionsville, IN
 INVENTOR: Woonza Rhee, Palo Alto, CA
Donald G. Wallace, Menio Park, CA
                                                                                                                                                                                                                                    Jeffrey A. Dodge, Indianapolis, IN
                                                                                                                                                                                                               Jeffrey A. Dodge, Indianapolis, IN
Chris J. Vlahos, Carmel, IN
ASSIGNEE: Eli Lilly and Company, Indianapolis, IN (U.S. corp.)
APPL-NO: 08/111,687
DATE FILED: Aug. 25, 1993
ART-UNIT: 129
PRIM-EXMR: Allen J. Robinson
Deborah Lambkin
                      Alan S. Michaels, Boston, MA
Ramon A. Burns, Jr., Fremont, CA
                      Louis Fries, Los Altos, CA
                      Frank DeLustro, Belmont, CA
Hanne Bentz, Newark, CA
 Hanne Bentz, Newark, CA
ASSIGNEE: Collagen Corporation, Palo Alto, CA (U.S. corp.)
APPL-NO: 08/29/2,415
DATE FILED: Aug. 18, 1994
ART-UNIT: 127
PRIM-EXMR: Nathan M. Nutter
LEGAL-REP: Morrison & Foerster
                                                                                                                                                                                                                LEGAL-REP: Roger S. Benjamin, Steven A. Fontana, David E. Boone
                                                                                                                                                                                                              US PAT NO: 5,480,906 [IMAGE AVAILABLE] L3: 33 of 93
DATE ISSUED: Jan. 2, 1996
TITLE: Stereochemical Wortmannin derivatives
INVENTOR: Lawrence C. Creemer, Indianapolis, IN
Herbert A. Kirst, Indianapolis, IN
ASSIGNEE: Eli Lilly and Company, Indianapolis, IN (U.S. corp.)
08/269,716
DATE FILED: Jul. 1, 1994
ART-UNIT: 123
PRIM-EXMR: C. Warren by
ASST-EXMR: C. Warren by
Ba K. Trinh
LEGAL-REP: Thomas J. Dodd, David E. Boone
  US PAT NO: 5,521,315 [IMAGE AVAILABLE]
                                                                                                                            1.3: 27 of 93
 US PAT NO: 5,27,319 jumage Available]
DATE ISSUED: May 28, 1998
TITLE: Olefin substituted long chain compounds INVENTOR: Gail Underiner, Brier, WA
David Porubek, Seattle, WA
J. Peter Klein, Vashon, WA
                      Elisa Eiseman, Seattle, WA
Alistair Leigh, Brier, WA
Anil Kumar, Seattle, WA
  John Michnick, Seattle, WA
ASSIGNEE: Cell Therapeutics, Inc., Seattle, WA (U.S. corp.)
APPL-NO: 08/059,697
                                                                                                                                                                                                              US PAT NO: 5,476,666 [IMAGE AVAILABLE] L3: 34 of DATE ISSUED: Dec. 19, 1995
TITLE: Glycosaminoglycan-synthetic polymer conjugates
INVENTOR: Woonza M. Rhee, Palo Alto, CA
Richard A. Berg, Los Altos, CA
ASSIGNEE: Collagen Corporation, Palo Alto, CA (U.S. corp.)
APPL-NO: 08/434,725
DATE FILED: May 4, 1995
ART-UNIT: 127
PRIM-EXMR: Nathan M. Nutter
LEGAL-REP: Kathi Rafayko
                                                                                                                                                                                                                                                                                                                                          L3: 34 of 93
  APPL-NO: Outbos.097
DATE FILED: May 10, 1993
ART-UNIT: 122
PRIM-EXMR: Mukund J. Shah
ASST-EXMR: Pavanaram K. Sripada
LEGAL-REP: Stephen Faciszewski, Jeffrey B. Oster
  US PAT NO: 5,512,545 [IMAGE AVAILABLE]
DATE ISSUED: Apr. 30, 1996
TITLE: PDGF-B analogues
INVENTOR: David Brown, Canterbury, England
Richard M. Edwards, Oxford, England
                                                                                                                            L3: 28 of 93
                                                                                                                                                                                                                US PAT NO: 5,475,052 [IMAGE AVAILABLE]
DATE ISSUED: Dec. 12, 1995
                                                                                                                                                                                                                                                                                                                                          L3: 35 of 93
                       Stewart Craig, Oxford, England
Anne L. Cook, Oxford, England
John M. Clements, Oxford, England
                                                                                                                                                                                                                                          Collagen-synthetic polymer matrices prepared using a
   ASSIGNEE: British Biotech Pharmaceuticals Limited, both of, United Kingdom (foreign corp.)
Pfizer Limited, both of, United Kingdom (foreign corp.)
                                                                                                                                                                                                                 multiple step reaction
INVENTOR: Woonza M. Rhee, Palo Alto, CA
                                                                                                                                                                                                                 Richard A. Berg, Los Altos, CA
ASSIGNEE: Collagen Corporation, Palo Alto, CA (U.S. corp.)
APPL-NO: 08/236,769
   APPL-NO: 08/094,079
DATE FILED: Aug. 31, 1993
ART-UNIT: 182
PRIM-EXMR: Marianne P. Allen
                                                                                                                                                                                                                 DATE FILED: May 2, 1994
ART-UNIT: 127
```

PRIM-EXMR: Nathan M. Nutter LEGAL-REP: Kathi Rafayko US PAT NO: 5,474,982 [IMAGE AVAILABLE]
DATE ISSUED: Dec. 12, 1995
TITLE: PDGF analogs and methods of use
INVENTOR: Mark J. Murray, Seattle, WA L3: 36 of 93 James D. Kelly, Seattle, WA
ASSIGNEE: ZymoGenetics, Inc., Seattle, WA (U.S. corp.)
APPL-NO: 08/273,779 APPL-NO: 0x273,779
DATE FILED: Jul. 12, 1994
ART-UNIT: 181
PRIM-EXMR: Jill Warden
ASST-EXMR: Benet Prickril
LEGAL-REP: Seed and Berry US PAT NO: 5,473,070 [IMAGE AVAILABLE] L3: 37 of DATE ISSUED: Dec. 5, 1995

TITLE: Substituted long chain alcohol xanthine compounds INVENTOR: Gail Underiner, Brier, WA

David Porubek, Edmonds, WA

J. Peter Klein, Vashon Island, WA

Paul Woodson, Bothell, WA

ASSIGNEE: Cell Therapeutics, Inc., Seattle, WA (U.S. corp.)

APPL-NO: 07/976,353

DATE FILED: Nov. 16, 1992 L3: 37 of 93 APPL-NU: U1/9/6,353
DATE FILED: Nov. 16, 1992
ART-UNIT: 122
PRIM-EXMR: Mukund J. Shah
ASST-EXMR: P. K. Sripada
LEGAL-REP: Stephen Faciszewski, Jeffrey B. Oster US PAT NO: 5,470,911 [IMAGE AVAILABLE] L3: 38
DATE ISSUED: Nov. 28, 1995
TITLE: Glycosaminoglycan-synthetic polymer conjugates
INVENTOR: Woonza M. Rhee, Palo Alto, CA L3: 38 of 93 Richard A. Berg, Los Altos, CA
ASSIGNEE: Collagen Corporation, Palo Alto, CA (U.S. corp.)
APPL-NO: 08/433,656 APTL-NU: 08/433,006
DATE FILED: May 4, 1995
ART-UNIT: 127
PRIM-EXMR: Nathan M. Nutter
LEGAL-REP: Kathi Rafayko US PAT NO: 5,470,878 [IMAGE AVAILABLE] DATE ISSUED: Nov. 28, 1995 L3: 39 of 93 ITILE: Cell signaling inhibitors
INVENTOR: John Michnick, Seattle, WA
Gail E. Underiner, Brier, WA
J. Peter Klein, Vashon Island, WA
Glenn C. Rice, Seattle, WA ASSIGNEE Cell Therapeutics, Inc., Seattle, WA (U. ASSIGNEE) Cell Therapeutics, Inc., Seattle, WA (U. ASSIGNEE) Dec. 8, 1993
ART-UNIT: 129
PRIM-EXMR: Shailendra Kumar
LEGAL-REP: Stephen Faciszewski, Jeffrey B. Oster Cell Therapeutics, Inc., Seattle, WA (U.S. corp.) US PAT NO: 5,468,468 [IMAGE AVAILABLE] L3: 40 of 93
DATE ISSUED: Nov. 21, 1995
TITLE: Method for making a monoclonal antibody, monoclonal antibodies to .alpha. PD
INVENTOR: William J. LaRochelle, Gaithersburg, MD
Jacalyn Pierce, Potomac, MD
Roy A. Jensen, Franklin, TN
Study A. Aspreson, Great Falls, VA L3: 40 of 93 Stuart A. Aaronson, Great Falls, VA
ASSIGNEE: The United States of America, as represented by the Secretary of the Department of Health & Human Services, Washington, DC (U.S. govt.)

APPL-NO: 08/081,216

DATE FILED: Jun. 25, 1993

ART-UNIT: 186

PRIM-EXMR: David L. Lacey

ASST-EXMR: Susan A. Loring LEGAL-REP: Foley & Lardner US PAT NO: 5,457,093 [IMAGE AVAILABLE] 13:41 of 93 DATE ISSUED: Oct. 10, 1995

TITLE: Gel formulations containing growth factors
INVENTOR: John K. Cini, Bethlehem, PA

Amy L. Finkenaur, Neshanic Station, NJ
ASSIGNEE: Ethicon, Inc., Somerville, NJ (U.S. corp.)
APPL-NO: 08/135,230

APPL-NO: 08/133,230
DATE FILED: Oct. 12, 1993
ART-UNIT: 181
PRIM-EXMR: Howard E. Schain
ASST-EXMR: Sheela J. Huff

US PAT NO: 5,455,041 [IMAGE AVAILABLE] L3: 42 of 93
DATE ISSUED: Oct. 3, 1995
TITLE: Method for inducing periodontal tissue regeneration
INVENTOR: Robert J. Genco, Buffalo, NY
Moon-II Cho, Amherst, NY
ASSIGNEE: Research Foundation of State University of New York at
Buffalo, Buffalo, NY (U.S. corp.)
APPL-NO: 08/121,041
DATE FILED: Sep. 13, 1993
ART.UNIT: 152
PRIM-EXMR: Thurman K. Page
ASST-EXMR: Carlos Azpuru ASST-EXMR: Carlos Azpuru LEGAL-REP: Hodgson, Russ, Andrews, Woods & Goodyear US PAT NO: 5,448,091 [IMAGE AVAILABLE] L3: 43 of 93
DATE ISSUED: Aug. 29, 1995
TITLE: Collagen-polymer conjugates containing an ether linkage
INVENTOR: Woonza Rhee, Palo Alto, CA
Donald G. Wallace, Menlo Park, CA
Alan S. Michaels, Boston, MA
Ramon A. Burns, Jr., Fremont, CA
Louis Fries, Los Altos, CA
Frank Del.ustro, Belmont, CA
Hanne Bentz, Newark, CA Hanne Bentz, Newark, CA
ASSIGNEE: Collagen Corporation, Palo Alto, CA (U.S. corp.)
APPL-NO: 08/368,874 DATE FILED: Jan. 5, 1995
ART-UNIT: 153
PRIM-EXMR: Nathan M. Nutter
LEGAL-REP: Morrison & Foerster US PAT NO: 5,444,151 [IMAGE AVAILABLE] L3
DATE ISSUED: Aug. 22, 1995
TITLE: Platelet derived growth factor antagonists
INVENTOR: Flemming S. Vassboth, Uppsala, Sweden
Maria Andersson, Uppsala, Sweden L3: 44 of 93 Gudrun Backstrom, Uppsala, Sweden Ulla Engstrom, Uppsala, Sweden Carl-Henrik Heldin, Uppsala, Sweden Ulf Hellman, Uppsala, Sweden
Arne stman, Uppsala, Sweden
Bengt Westermark, Uppsala, Sweden
ASSIGNEE: Ludwig Institute for Cancer Research, New York, NY (U.S. corp.)
APPL-NO: 07/977,234
DATE FILED: Nov. 16, 1992
ART-UNIT: 182
PRIM-EXMR: Garnette D. Draper ASST-EXMR: Marianne Allen LEGAL-REP: Felfe & Lynch US PAT NO: 5,440,041 [IMAGE AVAILABLE] L3: 45 of DATE ISSUED: Aug. 8, 1995

TITLE: Acetal or ketal substituted xanthine compounds
INVENTOR: Alistair Leigh, Edmonds, WA

ASSIGNEE: Cell Therapeutics, Inc., Seattle, WA (U.S. corp.)

08/194,135

DATE ELL ED: Ebb 8, 1904 L3: 45 of 93 DATE FILED: Feb. 8, 1994
ART-UNIT: 122
PRIM-EXMR: Mukund J. Shah
ASST-EXMR: Pavanaram K. Srīpada
LEGAL-REP: Stephen Faciszewski, Jeffrey B. Oster US PAT NO: 5,428,135 [IMAGE AVAILABLE] DATE ISSUED: Jun. 27, 1995 L3: 46 of 93 DATE ISSUEU: Jun. 27, 1995

TITLE: Production of platelet-derived growth factor 8-chain heterodimers from high expression host cell system INVENTOR: David E. Lyons, Thousand Oaks, CA ARSIGNEE: Amgen Inc., Thousand Oaks, CA (U.S. corp.)

APPL-NO: 08/236,880

ATE ELI ED: 40/29, 1904 NPFL-NU: U87/36,880
DATE FILED: Apr. 29, 1994
ART-UNIT: 182
PRIM-EXMR: Marianne Porta Allen
LEGAL-REP: Julia E. Abers US PAT NO: 5,428,010 [IMAGE AVAILABLE]
DATE ISSUED: Jun. 27, 1995
TITLE: Biologically active B-chain homodimers
INVENTOR: Mark J. Murray, Seattle, WA L3: 47 of 93 MART J. mulray, scalabe, WA

ASSIGNEE: ZymoGenetics, Inc., Seattle, WA (U.S. corp.)

APPL-NO: O77852,905

DATE FILED: Mar. 18, 1992

ART-UNIT: 182

Hanne Bentz, Newark, CA ASSIGNEE: Collage: 08/177,578 PRIM-EXMR: Garnette D. Draper ASST-EXMR: Shelly Guest Cermak Collagen Corporation, Palo Alto, CA (U.S. corp.) ASSIGNE: 08/17,578

DATE FILED: Jan. 5, 1994

ART-UNIT: 153

PRIM-EXMR: Nathan M. Nutter

LEGAL-REP: Morrison & Foerster Seed and Berry LEGAL-REP: US PAT NO: 5,418,222 [IMAGE AVAILABLE] L3: 48 of 93
DATE ISSUED: May 23, 1995
TITLE: Multi-layered collagen film compositions for delivery of L3: 48 of 93 proteins and methods of using same
INVENTOR: Suk-Zu Song, Moorpark, CA
Andrew Morawiecki, Camarillo, CA
Glenn F. Pierce, Thousand Oaks, CA
Colin G. Pitt, Westlake Village, CA US PAT NO: 5,371,205 [IMAGE AVAILABLE]
DATE ISSUED: Dec. 6, 1994
TITLE: PDGF alpha, receptor
INVENTOR: James D. Kelly, Seattle, WA L3: 54 of 93 Mark J. Murray, Seattle, WA
ASSIGNEE: ZymoGenetics, Inc., Seattle, WA (U.S. corp.)
APPL-NO: 07/947,358 ASSIGNEE: Amgen Inc., Thousand Oaks, CA (U.S. corp.)
APPL-NO: 08/267,647 APPL-NO: 08/26/,947
DATE FILE 0. Jun. 28, 1994
ART-UNIT: 185
PRIM-EXMR: Michael G. Wityshyn
ASST-EXMR: Nancy J. Gromet-Degen
LEGAL-REP: Daniel M. Chambers, Daniel R. Curry AFTL-NO: U/M47,336
DATE FILED: Sep. 18, 1992
ART-UNIT: 187
PRIM-EXMR: Mindy B. Fleisher
LEGAL-REP: Seed and Berry US PAT NO: 5,418,135 [IMAGE AVAILABLE] L3: 49 of 93

DATE ISSUED: May 23, 1995

TITLE: Method of inhibiting binding of PDGF to a PDGF receptor by biosynthetic PDGF antagonists

INVENTOR: Roy H. L. Pang, Medway, MA

ASSIGNEE: APPL-NO: 08/095,898

DATE ELECT. May 24, 1002 US PAT NO: 5,354,756 [IMAGE AVAILABLE] L3: 55
DATE ISSUED: Oct. 11, 1994
TITLE: Olefin-substituted long chain xanthine compounds
INVENTOR: Gail Underliner, Brier, WA L3: 55 of 93 INVENTOR: Gail Underiner, Brier, WA
David Porubek, Edmonds, WA
J. Peter Klein, Vashon Island, WA
ASSIGNEE: Cell Therapeutics, Inc., Seattle, WA (U.S. corp.)
APPL-NO: 08/003,372
DATE FILED: Jan. 12, 1993
ART-UNT: 122
PRIM-EXMR: John M. Ford
ASST-EXMR: Pavanaram K. Sripada APPL-NO: 02/055,050
DATE FILED: Jul. 21, 1993
ART-UNIT: 182
PRIM-EXMR: Garnette D. Draper
ASST-EXMR: Gian P. Wang
LEGAL-REP: Testa, Hurwitz & Thibeault LEGAL-REP: Jeffrey B. Oster, Stephen Faciszewski US PAT NO: 5,413,791 [IMAGE AVAILABLE]
DATE ISSUED: May 9, 1995
TITLE: Collagen-polymer conjugates
INVENTOR: Woonza Rhee, Palo Alto, CA
Donald G. Wallace, Menlo Park, CA L3: 50 of 93 US PAT NO: 5,340,813 [IMAGE AVAILABLE] L
DATE ISSUED: Aug. 23, 1994
TITLE: Substituted aminoalkyl xanthine compounds
INVENTOR: J. Peter Klein, Vashon, WA
Gail Underiner, Bothell, WA L3: 56 of 93 Alan S. Michaels, Boston, MA Ramon A. Burns, Jr., Fremont, CA Louis Fries, Los Altos, CA Frank DeLustro, Belmont, CA Hanne Bentz, Newark, CA Alistair Leigh, Edmonds, WA Alistari Leigh, Edmonds, WA
ASSIGNEE: Cell Therapeutics, Inc., Seattle, WA (U.S. corp.)
07/873,804
DATE FILED: Nov. 9, 1992
ART-UNIT: 122
PRIM-EXMR: Mukund J. Shah
ASST-EXMR: P. K. Sripada
LEGAL-REP: Jeffrey B. Oster ASSIGNEE: Collagen Corporation, Palo Alto, CA (U.S. corp.)
APPL-NO: 08/198,128
DATE FILED: Feb. 17, 1994
ART-UNIT: 153
PRIM-EXMR: Nathan M. Nutter
LEGAL-REP: Morrison & Foerster US PAT NO: 5,334,532 [IMAGE AVAILABLE] L3: 57 of 93
DATE ISSUED: Aug. 2, 1994
TITLE: PDGF-8 fusion protein, vectors, and host cells for use in production thereof
INVENTOR: Charles Tackney, Brooklyn, NY US PAT NO: 5,408,040 [IMAGE AVAILABLE]
DATE ISSUED: Apr. 18, 1995
TITLE: Connective tissue growth factor(CTGF)
INVENTOR: Gary R. Grotendorst, Lutz, F.L. L3: 51 of 93 Jurgen Hoppe, Wurzburg, Federal Republic of Germany Wolfram Eichner, Braunschweig, Federal Republic of Germany Herbert Weich, Braunschweig, Federal Republic of Germany Douglas M. Bradham, Jr., Baltimore, MD
ASSIGNEE: University of South Florida, Tampa, FL (U.S. corp.)
APPL-NO: 08/167,628 ASSIGNEE: ImClone Systems Incorporated, New York, NY (U.S. corp.)
APPL-NO: 07/675,885 APPL-NO: 06/167,626
DATE FILED: Dec. 14, 1993
ART-UNIT: 182
PRIM-EXMR: Garnette D. Draper
ASST-EXMR: Lorraine M. Spector APPL-NO: 0/16/5,885
DATE FILED: Jun. 4, 1991
ART-UNIT: 182
PRIM-EXMR: Robert J. Hill, Jr.
ASST-EXMR: Marianne Porta Allen
LEGAL-REP: Irving N. Feit, Eric J. Sheets US PAT NO: 5,378,725 [IMAGE AVAILABLE] L3
DATE ISSUED: Jan. 3, 1995
TITLE: Inhibition of phosphatidylinositol 3-kinase with L3: 52 of 93 TITLE: Inhibition of phosphatidylinositol 3-kinase with wortmannin and analogs thereof
INVENTOR: Rosanne Bonjouklian, Zionsville, IN
Chris J. Vlahos, Carmel, IN
Garth Powis, Tucson, AZ
ASSIGNEE: The Arizona Board of Regents, Tucson, AZ (U.S. corp.)
Eli Lilly and Company, Indianapolis, IN (U.S. corp.)
APPL-NO: 08/094,279
DATE FILED: Jul. 19, 1993
ART-UNIT: 125
PRIM-EXMR: Raymond J. Henley, III
LEGAL-REP: Steven A. Fontana, David E. Boone US PAT NO: 5,328,955 [IMAGE AVAILABLE]
DATE ISSUED: Jul. 12, 1994
TITLE: Collagen-polymer conjugates
INVENTOR: Woonza Rhee, Palo Alto, CA
Donald G. Wallace, Menio Park, CA L3: 58 of 93 Alan S. Michaels, Boston, MA Ramon A. Burns, Jr., Fremont, CA Louis Fries, Los Altos, CA Frank DeLustro, Belmont, CA Hanne Bentz, Newark, CA Hanne Bentz, Newark, CA
ASSIGNEE: Collagen Corporation, Palo Alto, CA (U.S. corp.)
APPL-NO: 07/922,541
DATE FILED: Jul. 30, 1992
ART-UNIT: 153
PRIM-EXMR: Nathan M. Nutter
LEGAL-REP: Karl Bozicevic US PAT NO: 5,376,375 [IMAGE AVAILABLE] L3: 53 of 12 DATE ISSUED: Dec. 27, 1994
TITLE: Method of augmenting tissue using collagen-polymer L3: 53 of 93 conjugates
INVENTOR: Woonza Rhee, Palo Alto, CA
Donald G. Wallace, Menlo Park, CA
Alan S. Michaels, Boston, MA US PAT NO: 5,326,695 [IMAGE AVAILABLE] L3: 59 of 93 DATE ISSUED: Jul. 5, 1994 TITLE: Platelet derived growth factor agonists INVENTOR: Maria Andersson, Uppsala, Sweden Ramon A. Burns, Jr., Fremont, CA Louis Fries, Los Altos, CA Gudrun Backstrom, Uppsala, Sweden

Frank DeLustro, Belmont, CA

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DATE FILED: Dec. 2, 1992
ART-UNIT: 153
PRIM-EXMR: Nathan M. N
                    Ulla Engstrom, Uppsala, Sweden
Carl-Henrik Heldin, Uppsala, Sweden
                                                                                                                                                                                                                                                    Nathan M. Nutter
                     Ulf Hellman, Uppsala, Sweden
Arne stman, Uppsala, Sweden
Bengt Westermark, Uppsala, Sweden
                                                                                                                                                                                                                   I FGAL-REP: Karl Bozicevic
                                Ludwig Institute for Cancer Research, New York, NY (U.S.
                                                                                                                                                                                                                  US PAT NO: 5,292,656 [IMAGE AVAILABLE]
DATE ISSUED: Mar. 8, 1994
TITLE: Rat osteosarcoma cell line OSR-6
INVENTOR: Claus-Jens W. Doersen, Cincinnati, OH
ASSIGNEE:
ASSIGNEE: Lucwing institute for Car
corp.)
APPL-NO: 07/883,949
DATE FILED: May 15, 1992
ART-UNIT: 182
PRIM-EXMR: Robert J. Hill, Jr.
ASST-EXMR: Marianne Porta Allen
Felfe & Lynch
                                                                                                                                                                                                                                                                                                                                                L3: 65 of 93
                                                                                                                                                                                                                    Robert J. Isfort, Cincinnati, OH
ASSIGNEE: The Procter & Gamble Company, Cincinnati, OH (U.S. corp.)
APPL-NO: 07/903,435
                                                                                                                                                                                                                   APPL-NO. DV905,433
DATE FILED: Jun. 24, 1992
ART-JNIT: 182
PRIM-EXMR: Robert J. Hill, Jr.
ASST-EXMR: Sally P. Teng
LEGAL-REP: Brahm J. Corstanje, Milton B. Graff, IV, David L. Suter
US PAT NO: 5,324,775 [IMAGE AVAILABLE] L3: 60 of DATE ISSUED: Jun. 28, 1994

TITLE: Biologically inert, biocompatible-polymer conjugates INVENTOR: Woonza Rhee, Palo Alto, CA

Donald G. Wallace, Menlo Park, CA

Alan S. Michaels, Boston, MA
                                                                                                                              L3: 60 of 93
                                                                                                                                                                                                                  US PAT NO: 5,288,628 [IMAGE AVAILABLE] L3: 66 of 93

DATE ISSUED: Feb. 22, 1994

TITLE: Rat osteosarcoma cell line OSR4TR1

INVENTOR: Claus-Jens W. Doersen, Cincinnati, OH

Robert J. Isfort, Cincinnati, OH

ASSIGNEE: The Procter & Garmble Company, Cincinnati, OH (U.S. corp.)

APPL-NO: 07/903,436

DATE FILED: Jun. 24, 1992

ART-UNIT: 182

PRIM-EXMR: Robert J. Hill, Jr.

ASST-EXMR: Sally Teng

Braham J. Corstanje, Milton B. Graff, IV, David L. Suter
                      Ramon A. Burns, Jr., Fremont, CA
Louis Fries, Los Altos, CA
Frank DeLustro, Belmont, CA
 Hanne Bentz, Newark, CA
ASSIGNEE: Collagen Corporation, Palo Alto, CA (U.S. corp.)
APPL-NO: 07/907,518
 APTL-NO. 07/307,318
DATE FILED: Jul. 2, 1992
ART-UNIT: 153
PRIM-EXMR: Nathan M. Nutter
LEGAL-REP: Karl Bozicevic
US PAT NO: 5,308,889 [IMAGE AVAILABLE]
DATE ISSUED: May 3, 1994
TITLE: Dehydrated collagen-polymer strings
INVENTOR: Woonza Rhee, Pal Alto, CA
Louis Fries, Los Altos, CA
                                                                                                                              L3: 61 of 93
                                                                                                                                                                                                                   US PAT NO: 5,286,645 [IMAGE AVAILABLE] L3: 67 of 93

DATE ISSUED: Feb. 15, 1994

TITLE: Rat osteosarcoma cell line osr3tr1

INVENTOR: Claus-Jens W. Doersen, Cincinnati, OH

ASSIGNEE: The Procter & Gamble Company, Cincinnati, OH (U.S. corp.)

APPL-NO: 07/903,434

DATE ELED: Inc. 24, 1992
 Louis Fries, Los Allos, CA
Ramesh Damani, Mountain View, CA
Kimberly McCullough, Hayward, CA
Frank DeLustro, Belmont, CA
ASSIGNEE: Collagen Corporation, Palo Alto, CA (U.S. corp.)
APPL-NO: 07/984,197
                                                                                                                                                                                                                     DATE FILED: Jun. 24, 1992
ART-UNIT: 182
PRIM-EXMR: Robert J. Hill, Jr.
 APPL-NO: 0//N84,19/
DATE FILED: Dec. 2, 1992
ART-UNIT: 153
PRIM-EXMR: Nathan M. Nutter
LEGAL-REP: Karl Bozicevic
                                                                                                                                                                                                                     ASST-EXMR: Sally Teng
LEGAL-REP: Brahm J. Corstanje, Milton B. Graff, IV, David L. Suter
                                                                                                                                                                                                                     US PAT NO: 5,286,644 [IMAGE AVAILABLE]
DATE ISSUED: Feb. 15, 1994
 US PAT NO: 5,306,500 [IMAGE AVAILABLE] L3: 62 of DATE ISSUED: Apr. 26, 1994
TITLE: Method of augmenting tissue with collagen-polymer
                                                                                                                               L3: 62 of 93
                                                                                                                                                                                                                     ITILE: Rat osteosarcoma cell line OSR-2
INVENTOR: Claus-Jens W. Doersen, Cincinnati, OH
Robert J. Isfort, Cincinnati, OH
                         conjugates
                                                                                                                                                                                                                      ASSIGNEE: The Procter & Gamble Company, Cincinnati, OH (U.S. corp.)
APPL-NO: 07/903,432
  INVENTOR: Woonza Rhee, Palo Alto, CA
Donald G. Wallace, Menlo Park, CA
                                                                                                                                                                                                                     APPL-NO: U7/903,432
DATE FILED: Jun. 24, 1992
ART-UNIT: 182
PRIM-EXMR: Robert J. Hill, Jr.
ASST-EXMR: Sally P. Teng
LEGAL-REP: Brahm J. Corstanje, Milton B. Graff IV, David L. Suter
                       Alan S. Michaels, Boston, MA
Ramon A. Burns, Jr., Fremont, CA
Louis Fries, Los Altos, CA
 Louis Fries, Los Altos, CA
Frank DeLustro, Belmont, CA
Hanne Bentz, Newark, CA
ASSIGNEE: Collagen Corporation, Palo Alto, CA (U.S. corp.)
APPL-NO: 08/110,577
DATE FILED: Aug. 23, 1993
ART-UNIT: 153
PRIM-EXMR: Nathan M. Nutter
LEGAL-REP: Morrison & Foerster
                                                                                                                                                                                                                     US PAT NO: 5,286,643 [IMAGE AVAILABLE]
DATE ISSUED: Feb. 15, 1994
                                                                                                                                                                                                                     TITLE: Rat osteosarcoma cell line OSR-8
INVENTOR: Claus-Jens W. Doersen, Cincinnati, OH
                                                                                                                                                                                                                                         Robert J. Isfort, Cincinnati, OH
                                                                                                                                                                                                                      ASSIGNEE The Procter & Gamble Company, Cincinnati, OH (U.S. corp.)
APPL-NO: 07/903,431
   US PAT NO: 5,304,595 [IMAGE AVAILABLE]
DATE ISSUED: Apr. 19, 1994
                                                                                                                                L3: 63 of 93
                                                                                                                                                                                                                     DATE FILED: Jun. 24, 1992
ART-UNIT: 182
PRIM-EXMR: Robert J. Hill, Jr.
ASST-EXMR: Sally P. Teng
LEGAL-REP: Brahm J. Corstanje, Milton B. Graff, IV, David L. Suter
   TITLE: Collagen-polymer conjugates
INVENTOR: Woonza Rhee, Palo Alto, CA
Donald G. Wallace, Menlo Park, CA
                       Alan S. Michaels, Boston, MA
Ramon A. Burns, Jr., Fremont, CA
Louis Fries, Los Altos, CA
Frank DeLustro, Belmont, CA
Hanne Bentz, Newark, CA
                                                                                                                                                                                                                    US PAT NO: 5,288,642 [IMAGE AVAILABLE] L3: 70 of 93

DATE ISSUED: Feb. 15, 1994

TITLE: Rat osteosarcoma cell line OSR5TR2

INVENTOR: Claus-Jens W. Doersen, Cincinnati, OH

Robert J. Isfort, Cincinnati, OH

ASSIGNEE: The Procter & Gamble Company, Cincinnati, OH (U.S. corp.)

APPL-NO: 07/903,429

DATE FILED: Jun. 24, 1992

ART-UNIT: 182

PRIM-EXMR: Robert J. Hill, Jr.

ASST-EXMR: Sally P. Teng
   ASSIGNEE: Collagen Corporation, Palo Alto, CA (U.S. corp.)
   ASSIGNEE: Collager Corporation
APPL-NO: 07/998,802
DATE FILED: Dec. 30, 1992
ART-UNIT: 153
PRIM-EXMR: Nathan M. Nutter
LEGAL-REP: Karl Bozicovic
                                                                                                                                                                                                                      PRIM-EXMR: Robert J. Hill, Jr. ASST-EXMR: Sally P. Teng
                                                                                                                                L3: 64 of 93
   US PAT NO: 5,292,802 [IMAGE AVAILABLE]
   DATE ISSUED: Mar. 8, 1994
   TITLE: Collagen-polymer tubes for use in vascular surgery
INVENTOR: Woonza Rhee, Palo Alto, CA
Kimberly McCullough, Hayward, CA
ASSIGNEE: Collagen Corporation, Palo Alto, CA (U.S. corp.)
APPL-NO: 07/985,680
                                                                                                                                                                                                                      LEGAL-REP: Brahm J. Corstanje, Milton B. Graff, IV, David L. Suter
                                                                                                                                                                                                                        US PAT NO: 5,272,084 [IMAGE AVAILABLE]
                                                                                                                                                                                                                        DATE ISSUED: Dec. 21, 1993
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ART-UNIT: 182
PRIM-EXMR: Robert J. Hill, Jr.
ASST-EXMR: Marianne Porta Allen
LEGAL-REP: Peter R. Shearer
                 DNA molecules encoding platelet-derived growth factor B chain analogs and method for expression thereof R: Arlen R. Thornason, Thousand Oaks, CA
TITLE:
INVENTOR:
ASSIGNEE:
                          Amgen Inc., Thousand Oaks, CA (U.S. corp.)
ASSIGNEE: Amgen inc., Inousand
APPL-NO: 07/624,451

DATE FILED: Dec. 13, 1990

ART-UNIT: 182

PRIM-EXMR: Robert J. Hill, Jr.

ASST-EXMR: Shelly Guest Cermak

LEGAL-REP: Julia E. Abers
                                                                                                                                                             US PAT NO: 5,219,576 [IMAGE AVAILABLE]
DATE ISSUED: Jun. 15, 1993
                                                                                                                                                                                                                                                           L3: 77 of 93
                                                                                                                                                                                Collagen wound healing matrices and process for their
                                                                                                                                                                                production
                                                                                                                                                              INVENTOR: George H. Chu, Sunnyvale, CA
                                                                                                                                                                             Yasushi Ogawa, Pacifica, CA
John M. McPherson, Hopkinton, MA
US PAT NO: 5,264,358 [IMAGE AVAILABLE]
DATE ISSUED: Nov. 23, 1993
                                                                                              L3: 72 of 93
                                                                                                                                                                              George Ksander, Redwood City, CA
                                                                                                                                                                              Bruce Pratt, Union City, CA
 INVENTOR: Claus-Jens W. Doersen, Cincinnati, OH
Robert J. Isfort, Cincinnati, OH
                                                                                                                                                                              Diana Hendricks, Brea, CA
                                                                                                                                                              Hugh McMullin, San Bruno, CA
ASSIGNEE: Collagen Corporation, Palo Alto, CA (U.S. corp.)
APPL-NO: 07/801,732
Robert J. Istort, Cincinnati, OH
ASSIGNEE: The Procter & Gamble Company, Cincinnati, OH (U.S. corp.)
APPL-NO: 07/804,107
DATE FILED: Jun. 24, 1992
ART-UNIT: 187
PRIM-EXMR: Margaret Moskowitz Parr
ASST-FXMR: Carla Myers
                                                                                                                                                              DATE FILED: Dec. 3, 1991
ART-UNIT: 152
PRIM-EXMR: Thurman K. Page
                                                                                                                                                               ASST-EXMR: G. S. Kishore
LEGAL-REP: Morrison & Foerster
  ASST-EXMR:
                            Carla Myers
 LEGAL-REP: Braham J. Corstanje, Milton B. Graff, IV, Jerry J. Yetter
                                                                                                                                                               US PAT NO: 5,194,596 [IMAGE AVAILABLE] L3: 78 of DATE ISSUED: Mar. 16, 1993

TITLE: Production of vascular endothelial cell growth factor INVENTOR: Edmund G. Tischer, Palo Alto Judith A. Abraham, Sunnyvale

John C. Fiddes, Palo Alto
                                                                                                                                                                                                                                                            L3: 78 of 93
 US PAT NO: 5,264,214 [IMAGE AVAILABLE]
DATE ISSUED: Nov. 23, 1993
                                                                                               L3: 73 of 93
 TITLE: Composition for bone repair INVENTOR: Woonza Rhee, Palo Alto, CA
                 Donald G. Wallace, Menlo Park, CA
Alan S. Michaels, Boston, MA
Ramon A. Burns, Jr., Fremont, CA
                                                                                                                                                                               Richard L. Mitchell, Sunnyvale, CA
                                                                                                                                                               ASSIGNEE: California Biotechnology Inc., Mountain View, CA (U.S.
                 Louis Fries, Los Altos, CA
Frank DeLustro, Belmont, CA
Hanne Bentz, Newark, CA
                                                                                                                                                              ASSIGNEE. Corp.)
APPL-NO: 07/450,883
DATE FILED: Dec. 14, 1989
ART-UNIT: 183
PRIM-EXMR: Christine M. Nucker
ASST-EXMR: H. F. Sidberry
LEGAL-REP: Peter R. Shearer
 ASSIGNEE: Collagen Corporati
APPL-NO: 07/930,142
DATE FILED: Aug. 14, 1992
ART-UNIT: 153
PRIM-EXMR: Nathan M. Nutter
LEGAL-REP: Karl Bozicevic
                           Collagen Corporation, Palo Alto, CA (U.S. corp.)
                                                                                                                                                                US PAT NO: 5,192,660 [IMAGE AVAILABLE]
                                                                                                                                                                                                                                                            L3: 79 of 93
                                                                                                                                                                DATE ISSUED: Mar. 9, 1993

TITLE: ELISA methods for the determination of human platelet derived growth factor (PDGF) dimer forms present in
  US PAT NO: 5,238,950 [IMAGE AVAILABLE]
DATE ISSUED: Aug. 24, 1993
                                                                                               L3: 74 of 93
  TITLE: Inhibitors of platelet-derived growth factor INVENTOR: John W. Clader, Cranford, NJ
                                                                                                                                                                                  human tissues and fluids
R: Berenice Y. Reed-Gitomer, Washington Grove, MD
                                                                                                                                                                INVENTOR:
ASSIGNEE:
                  Harry R. Davis, Berkeley Heights, NJ
Deborra Mullins, New York, NY
Stuart Rosenblum, West Orange, NJ
                                                                                                                                                                                          The United States of America as represented by the
                                                                                                                                                                                  Department of Health and Human Services, Washington, DC
                                                                                                                                                                                 (U.S. govt.)
: 07/341,949
                  Jay Weinstein, Upper Montclair, NJ
   ASSIGNEE: Schering Corporation, Kenilworth, NJ (U.S. corp.)
APPL-NO: 07/808,997
                                                                                                                                                                 APPL-NO:
                                                                                                                                                                APPL-NU: U//341,949
DATE FILED: Apr. 24, 1989
ART-UNIT: 182
PRIM-EXMR: David Saunders
LEGAL-REP: Birch, Stewart, Kolasch & Birch
  APPL-NO. 07000,997
DATE FILED: Dec. 17, 1991
ART-UNIT: 122
PRIM-EXMR: Mukund J. Shah
ASST-EXMR: Y. N. Gupta
LEGAL-REP: Paul A. Thompson, Anita W. Magatti
                                                                                                                                                                US PAT NO: 5,175,255 [IMAGE AVAILABLE]
DATE ISSUED: Dec. 29, 1992
                                                                                                                                                                ITILE: Methods for purification of platelet-derived growth factor INVENTOR: Arlen R. Thomason, Thousand Oaks, CA Margery A. Nicolson, Pacific Palisades, CA
                                                                                                1.3: 75 of 93
   US PAT NO: 5,219,759 [IMAGE AVAILABLE]
   DATE ISSUED: Jun. 15, 1993
TITLE: Recombinant DNA encoding PDGF A-chain polypeptide and
                                                                                                                                                                Margery A. Nicotson, Pacific Palisades, CA
ASSIGNEE: Amgen Inc., Thousand Oaks, CA (U.S. corp.)
APPL-NO: 07/025,344
DATE FILED: Mar. 23, 1987
ART-UNIT: 181
PRIM-EXMR: F. T. Moezie
LEGAL-REP: Julia E. Abers, Steven M. Odre
                     expression vectors
                  DR: Carl-Henrik Heldin, Uppsala, Sweden
Christer Betsholtz, Uppsala, Sweden
Bengt Westermark, Uppsala, Sweden
                   Timothy J. Knott, London, England
                  James Scott, London, England
Graeme I. Bell, San Francisco, CA
   ARSIGNEE: Chiron Corporation, Emeryville, CA (U.S. corp.)

APPL-NO: 07/574,540

DATE FILED: Aug. 27, 1990

ART-UNIT: 182

PRIM-EXMR: Robert J. Hill, Jr.
                                                                                                                                                                 US PAT NO: 5,162,430 [IMAGE AVAILABLE]
                                                                                                                                                                                                                                                              L3: 81 of 93
                                                                                                                                                                 DS PAT NO.: 9, 102,439 image Avaicable
DATE ISSUED: Nov. 10, 1992
ITTLE: Collagen-polymer conjugates
INVENTOR: Woonza Rhee, Palo Alto, CA
Alan S. Michaels, Boston, MA
Alan S. Michaels, Boston, MA
                              Marianne Porta Allen
Barbara G. McClung, Roberta L. Robins, Amy L. Collins
    ASST-EXMR:
    LEGAL-REP:
                                                                                                                                                                                 Ramon A. Burns, Jr., Fremont, CA
Louis Fries, Los Altos, CA
Frank DeLustro, Belmont, CA
    US PAT NO: 5,219,739 [IMAGE AVAILABLE]
DATE ISSUED: Jun. 15, 1993
                                                                                                 L3: 76 of 93
                                                                                                                                                                                 Hanne Bentz, Newark, CA
                                                                                                                                                                  ASSIGNEE: Collagen Corporation, Palo Alto, CA (U.S. corp.)
APPL-NO: 07/433,441
                       DNA sequences encoding bVEGF120 and hVEGF121 and methods
                      for the production of bovine and human vascular endothelial cell growth factors, bVEGF.sub.120 and
                                                                                                                                                                 APPL-NO: U//433,441
DATE FILED: Nov. 14, 1989
ART-UNIT: 153
PRIM-EXMR: Nathan M. Nutter
LEGAL-REP: Morrison & Foerster
                      hVEGF.sub.121
     INVENTOR: Edmund G. Tischer, Palo Alto, CA
                    Judith A. Abraham, Sunnyvale, CA
John C. Fiddes, Palo Alto, CA
    ASSIGNEE: Scios Nova Inc., Mountain View, CA (U.S. corp.)
APPL-NO: 07/559,041
DATE FILED: Jul. 27, 1990
                                                                                                                                                                                                                                                               L3: 82 of 93
                                                                                                                                                                  US PAT NO: 5,155,027 [IMAGE AVAILABLE]
                                                                                                                                                                  DATE ISSUED: Oct. 13, 1992
TITLE: Method of producing secreted receptor analogs and
```

```
ASSIGNEE: Institute of Moelcular Biology, Inc., Boston, MA (U.S.
biologically active peptide dimers

INVENTOR: Andrzej Z. Sledziewski, Seattle, WA
Lillian A. Bell, Seattle, WA
Wayne R. Kindsvogel, Seattle, WA
ASSIGNEE: ZymoGenetics, Inc., Seattle, WA (U.S. corp.)

APPL-NO: 07/347,291
                                                                                                                                                                                                     COID.)
                                                                                                                                                                                                    President and Fellows of Harvard College, Cambridge, MA
                                                                                                                                                                                  (U.S. corp.)
APPL-NO: 07/403,969
                                                                                                                                                                                 APPL-NO: 0//403,969
DATE FILED: Sep. 7, 1989
ART-UNIT: 189
PRIM-EXMR: Howard E. Schain
LEGAL-REP: Fish & Richardson
 APPL-NO: 07/347,291
DATE FILED: May 2, 1989
ART-UNIT: 185
PRIM-EXMR: Richard A. Schwartz
ASST-EXMR: John D. Ulm
LEGAL-REP: Seed and Berry
                                                                                                                                                                                  US PAT NO: 5,034,375 [IMAGE AVAILABLE]
DATE ISSUED: Jul. 23, 1991
                                                                                                                                                                                  ITILE: Process of wound healing using PDGF and EGF
INVENTOR: Harry N. Antoniades, Newton, MA
Samuel E. Lynch, Jamaica Plain, MA
 US PAT NO: 5,149,792 [IMAGE AVAILABLE]
DATE ISSUED: Sep. 22, 1992
                                                                                                          L3: 83 of 93
 TITLE: Platelet-derived growth factor B chain analogs INVENTOR: Arlen R. Thomason, Thousand Oaks, CA
                                                                                                                                                                                   ASSIGNEE: Institute of Molecular Biology, Inc., Boston, MA (U.S.
                                                                                                                                                                                                    corp.)
President and Fellows of Harvard College, Cambridge, MA
  ASSIGNEE:
                               Amgen Inc., Thousand Oaks, CA (U.S. corp.)
 APPL-NO: 07/454,794
DATE FILED: Dec. 19, 1989
                                                                                                                                                                                  (U.S. corp.)
APPL-NO: 07/231,145
DATE FILED: Aug. 10, 1988
ART-UNIT: 189
PRIM-EXMR: Howard E. Schain
LEGAL-REP: Fish & Richardson
 ART-UNIT: 182
PRIM-EXMR: David L. Lacey
ASST-EXMR: Shelly J. Guest
  LEGAL-REP: Julia E. Abers
 US PAT NO: 5,128,321 [IMAGE AVAILABLE]
DATE ISSUED: Jul. 7, 1992
TITLE: PDGF analogs and methods of use
INVENTOR: Mark J. Murray, Seattle, WA
James D. Kelly, Seattle, WA
                                                                                                           L3: 84 of 93
                                                                                                                                                                                  US PAT NO: 5,024,841 [IMAGE AVAILABLE]
DATE ISSUED: Jun. 18, 1991
                                                                                                                                                                                                                                                                                            L3: 90 of 93
                                                                                                                                                                                                        Collagen wound healing matrices and process for their
                                                                                                                                                                                    TITLE:
                                                                                                                                                                                                        production
                                                                                                                                                                                   INVENTOR: George H. Chu, Sunnyvale, CA
Yasushi Ogawa, Pacifica, CA
John M. McPherson, Hopkinton, MA
George Ksander, Redwood City, CA
  James D. Kelly, Seattle, WA
ASSIGNEE: ZymoGenetics, Inc., Seattle, WA (U.S. corp.)
APPL-NO: 07/230,190
DATE FILED: Aug. 8, 1988
ART-UNIT: 184
PRIM-EXMR: F. T. Moezie
LEGAL-REP: Seed and Berry
                                                                                                                                                                                                      Bruce Pratt, Union City, CA
                                                                                                                                                                                                     Diana Hendricks, Brea, CA
Hugh McMullin, San Bruno, CA
                                                                                                                                                                                    ASSIGNEE: Collagen Corporation, Palo Alto, CA (U.S. corp.)
APPL-NO: 07/213,726
DATE FILED: Jun. 30, 1988
ART-UNIT: 152
PRIM-EXMR: Thurman K. Page
ASST-EXMR: G. S. Kishore
  US PAT NO: 5,124,316 [IMAGE AVAILABLE]
                                                                                                           13:85 of 93
  US PAT NO: 5,124,316 [IMMOS AVAILABLE]
DATE ISSUED: Jun. 23, 1992
TITLE: Method for periodontal regeneration
INVENTOR: Harry N. Antoniades, Newton, MA
Samuel E. Lynch, Jamaica Plain, MA
ASSIGNEE: President and Fellows of Harvard College, Cambridge, MA
                                                                                                                                                                                     LEGAL-REP: Irell & Manella
                    (U.S. corp.)
Institute of Molecular Biology, Inc., Boston, MA (U.S.
                                                                                                                                                                                    US PAT NO: 5,019,559 [IMAGE AVAILABLE] L3: 91 of 93

DATE ISSUED: May 28, 1991

TITLE: Wound healing using PDGF and IGF-II

INVENTOR: Harry N. Antoniades, Newton, MA

Samuel E. Lynch, Jamaica Plain, MA

ASSIGNEE: President and Fellows of Harvard College, Cambridge, MA
  corp.)
APPL-NO: 07/582,332
DATE FILED: Sep. 13, 1990
ART-UNIT: 181
PRIM-EXMR: F. T. Moezie
                                                                                                                                                                                     (U.S. corp.)
APPL-NO: 07/272,090
DATE FILED: Nov. 16, 1988
   LEGAL-REP: Fish & Richardson
                                                                                                                                                                                     ART-UNIT: 186
PRIM-EXMR: Howard E. Schain
   US PAT NO: 5,110,604 [IMAGE AVAILABLE]
                                                                                                            13:88 of 93
   DATE ISSUED: May 5, 1992
                       Processes for producing collagen matrixes and methods of
   using same
INVENTOR: George H. Chu, Sunnyvale, CA
Yasushi Ogawa, Pacifica, CA
John M. McPherson, Framingham, MA
                                                                                                                                                                                     US PAT NO: 4,874,748 [IMAGE AVAILABLE] L3: 92 of 93
DATE ISSUED: Oct. 17, 1989
TITLE: Wound headling composition of TGF-alpha and PDGF
INVENTOR: Harry N. Antoniades, Newton, MA
Samuel E. Lynch, Jamaica Plain, MA
                                                                                                                                                                                                                                                                                             L3: 92 of 93
                     George Ksander, Redwood City, CA
Bruce Pratt, Union City, CA
Diana Hendricks, Brea, CA
                                                                                                                                                                                      ASSIGNEE: Institute of Molecular Biology, Inc., Boston, MA (U.S.
                                                                                                                                                                                                        corp.)
    Hugh McMullin, San Bruno, CA
ASSIGNEE: Collagen Corporation, Palo Alto, CA (U.S. corp.)
APPL-NO: 07/630,299
                                                                                                                                                                                                       President and Fellows of Harvard College, Cambridge, MA
                                                                                                                                                                                     (U.S. corp.)

APPL-NO: 07/136,399

DATE FILED: Dec. 22, 1987

ART-UNIT: 186

PRIM-EXMR: Howard E. Schain

LEGAL-REP: Paul T. Clark
    APPL-NO: Unfoliced
Date FileD: Dec. 19, 1990
ART-UNIT: 152
PRIM-EXMR: Thurman K. Page
ASST-EXMR: G. S. Kishore
LEGAL-REP: Morrison & Foerster
                                                                                                                                                                                      US PAT NO: 4,861,757 [IMAGE AVAILABLE] L3: 93 of 93

DATE ISSUED: Aug. 29, 1989

TITLE: Wound healing and bone regeneration using PDGF and IGF-I
                                                                                                             1.3: 87 of 93
    US PAT NO: 5,094,941 [IMAGE AVAILABLE]
    DATE ISSUED: Mar. 10, 1992
TITLE: Monoclonal antibodies to PDGF
                                                                                                                                                                                     INVENTOR: Harry N. Antoniades, Newton, MA
Samuel E. Lynch, Jamaica Plain, MA
Ray C. Williams, Arlington, MA
ASSIGNEE: Institute of Molecular Biology, Boston, MA (U.S. corp.)
President and Fellows of Harvard College, Cambridge, MA
    INVENTOR: Charles E. Hart, Brier, WA
ASSIGNEE: ZymoGenetics, Inc., Seattle, WA (U.S. corp.)
    ASSIGNEE: 2yrinoserics, iii
APPL-NO: 07/139,960
DATE FILED: Dec. 31, 1987
ART-UNIT: 182
PRIM-EXMR: David Saunders
LEGAL-REP: Seed and Berry
                                                                                                                                                                                      President and Peliows of P
(U.S. corp.)
APPL-NO: 07/120,943
DATE FILED: Nov. 16, 1987
ART-UNIT: 188
PRIM-EXMR: Howard E. Schain
LEGAL-REP: Paul T. Clark
     US PAT NO: 5,035,887 [IMAGE AVAILABLE]
                                                                                                              L3: 88 of 93
    US PAT NO: 5,035,887 [MAGE AVAILABLE]

DATE ISSUED: Jul. 30, 1991

TITLE: Wound healing composition of IL-1 and PDGF or IGF-1

INVENTOR: Harry N. Antoniades, Newton, MA

Samuel E. Lynch, Jamaica Plain, MA
                                                                                                                                                                                       => log y
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=> <s (platelet derived growth factor) or pdgf or odgf

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=> 4s homodimer or AA

237530 FILE MEDLINE 23147 FILE HCAPLUS

TOTAL FOR ALL FILES

260677 HOMODIMER OR AA

=> +s 13 (a) 16

L7 429 FILE MEDLINE 417 FILE HCAPLUS L8

TOTAL FOR ALL FILES 848 L3 (A) L6

=> •s I9 and py>1987

428 FILE MEDI INF 1.10 416 FILE HCAPLUS L11

TOTAL FOR ALL FILES 844 L9 AND PY>1987

=> 4s I9 not I12

1 FILE MEDLINE L13 1 FILE HCAPLUS

TOTAL FOR ALL FILES

=> <dup rem I15

PROCESSING COMPLETED FOR L15 4 2 DUP REM L15 (0 DUPLICATES REMOVED)

=> <d bib ab 1-

L16 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 1997 ACS

AN 1987:513455 HCAPLUS DN 107:113455

TI Detection of PDGF-2 homodimers in human tumor cells AU Igarashi, H.; Rao, C. D.; Siroff, M.; Leal, F.; Robbins, K. C.; Aaronson, S. A.

CS Lab. Cell. Mol. Biol., Natl. Cancer Inst., Bethesda, MD, 20892, USA

SO Oncogene (1987), 1(1), 79-85 CODEN: ONCNES

LA English

AB The v-sis oncogene encodes a protein structurally and functionally related to human platelet-derived growth factor (PDGF). The primary translational product of the human sis protooncogene is a 26-kd protein, p28c-sis. This product is processed to yield a disulfide-linked homodimer, p56c-sis, which is further processed to a 35,000-dalton dimer, p35c-sis. Like the v-sis gene product, the PDGF-2 precursor undergoes N-linked glycosylation, implying its processing through the endoplasmic reticulum. The PDGF-2 product was shown to possess functional properties of PDGF. Whereas lysates of control COS-1 cells lacked mitogenic activity, lysates of COS-1 cells transfected with a c-sis/PDGF-2 expression vector specifically stimulated DNA synthesis of quiescent fibroblasts. Moreover, this activity was completely inhibitable by PDGF antibody. Identical forms of the sis/PDGF-2 product were identified in human tumor cells that expressed c-sis/PDGF-2 transcripts. These proteins were shown to be specifically assocd, with the membrane component of the tumor cells and were not detectably secreted into the culture medium These findings support the concept that expression of the sis/PDGF-2 product in human cells responsive to its proliferative actions can be an important step in the processes leading to malignancy.

L16 ANSWER 2 OF 2 MEDLINE

AN 85183135 MEDLINE

TI Human platelet-derived growth factor stimulates prostaglandin synthesis by activation and by rapid de novo synthesis of cyclooxygenase.

AU Habenicht A J; Goerig M; Grulich J; Rothe D; Gronwald R; Loth U;

Schettler G; Kommerell B; Ross R
SO JOURNAL OF CLINICAL INVESTIGATION, (1985 Apr) 75 (4) 1381-7.
Journal code: HS7. ISSN: 0021-9738.

CY United States

DT Journal; Article; (JOURNAL ARTICLE)

LA English

FS Abridged Index Medicus Journals; Priority Journals; Cancer Journals EM 8508

AB Human platelet-derived growth factor (PDGF) stimulated prostaglanding (PG) E2 synthesis in the cell cycle of Swiss 3T3 cells at two distinct time intervals, with a first plateau within 10 min and a second plateau within 2-4 h after addition of PDGF. At 4 h, the concentration of PGE2 in PDGF-stimulated cultures exceeded the quiescent control cells by a factor of 10-15. Quiescent cells incubated with up to 16 microM exogenous arachidonic acid (AA) synthesized only small amounts of PGE2. In contrast, 4 h after addition of PDGF, the concentration of PGE2 synthesized from exogenous AA exceeded that in quiescent cultures by a factor of 28. The effect of PDGF stimulation on PG synthesis from exogenous AA

could not be explained by growth factor-mediated increase in the cellular free AA pool as shown in experiments using [14C] \*\*\*AA\*\*\*

\*\*\*\*PDGF\*\*\*\* also stimulated synthesis of PGI2 (prostacyclin), thromboxane, and PGF2 alpha from exogenous AA. While inhibition of protein synthesis by 10 micrograms/ml cycloheximide had no effect on the early increase in PGE2 synthesis, the second increase was completely prevented. Additionally, cycloheximide treatment at 6 h after PDGF stimulation resulted in rapid decline of PGE2 synthesis from exogenous AA. Quiescent cultures pretreated with 100 microM aspirin and stimulated by PDGF thereafter recovered from cyclooxygenase inhibition within 180 min. Our results suggest that phospholipase activation and resultant AA release is not sufficient to induce the burst of PG synthesis observed in PDGF-stimulated cells. Instead, PDGF stimulates PG synthesis by direct effects on the PG-synthesizing enzyme system, one involving a protein synthesis-independent mechanism and another that requires rapid

translation of cyclooxygenase.

L17 2 FILE MEDLINE 3 FILE HCAPLUS

TOTAL FOR ALL FILES 5 ODGF

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=> •d bib ab 1-

L20 ANSWER 1 OF 3 MEDLINE

**DUPLICATE 1** 

AN 86118705 MEDLINE

TI A human osteosarcoma cell line secretes a growth factor structurally related to a homodimer of PDGF A-chains

AU Heldin C H; Johnsson A; Wennergren S; Wernstedt C; Betsholtz C; Westermark B

SO NATURE, (1986 Feb 6-12) 319 (6053) 511-4.
Journal code: NSC. ISSN: 0028-0836.
CY ENGLAND: United Kingdom

DT Journal; Article; (JOURNAL ARTICLE)

LA English
FS Priority Journals; Cancer Journals

FM 8605

AB Platelet-derived growth factor (PDGF), as purified from fresh human platelets, is a protein of relative molecular mass (Mr) 30,000 composed of two disulphide-linked subunit chains of similar size named A and B (ref. 1). The dimer structure of PDGRF seems to be important for its biological effects, as reduction irreversibly inactivates the factor, it is not known, however, whether PDGF exists as a heterodimer or as a mixture of homodimers. Amino-acid sequence analysis has revealed that the A- and B-chains of human PDGF are related to each other, and that the B-chain is almost identical to part of the v-sis gene product of simian sarcoma virus (SSV). There is experimental evidence that a PDGF-like protein is indeed operational in SSV-induced transformation and the biologically active v-sis product is probably structurally similar to a putative dimer of PDGF B-chains. PDGF-like growth factors and/or a 4.2-kilobase (kb) c-sis transcript are present in several transformed mammalian cell lines and in certain nontransformed cells; cloned c-sis complementary DNA from human T cells transformed with human T-lymphotropic virus (HTLV) or from human endothelial cells contains the coding sequence for a putative PDGF B-chain precursor, but apparently lacks PDGF A-chain sequences. We have previously partially purified and characterized a PDGF-like growth factor from U-2 OS cells (osteosarcoma-derived growth factor, "\*\*ODGF\*\*\*) and shown that this factor has structural, functional and immunological characteristics in common with PDGF. We describe here a procedure for the preparation of homogeneous \*\*\*ODGF\*\*\* and provide evidence that this factor, which binds to the PDGF receptor, has a structure similar to a homodimer of PDGF A-chains.

L20 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 1997 ACS AN 1982:50352 HCAPLUS

DN 96:50352

Display 20.3032 and an antibody against platelet-derived growth factor AU Heldin, C. H.; Westermark, B.; Wastesson, A. CS Inst. Med. Physiol. Chem., Uppsala Univ., Uppsala, S-751 23, Swed. SC, Cell Res. (1981), 136(2), 255-81 CODEN: ECREAL; ISSN: 0014-4827

DT Journal LA English

AB An antibody was raised in a rabbit against platelet-derived growth factor (PDGF), purified from human platelets. The antibody recognized specifically 125I-labeled PDGF, as demonstrated by gel recognized specinically 1201-labeled POF, as demonstrated by electrophoretic anal. of pptd. radioactivity. Addn. of Igs from the immune serum to cell cultures together with POGF inhibited the multiplication-stimulating activity of the growth factor. Further, multiplication-stimulating activity in crude platelet lysate was retained upon passage over a column of Sepharose-bound anti-PDGF; it was recovered after elution of the column with acid. A radioimmunoassay for PDGF was developed, permitting the detn. of 5 ng PDGF/mL. Platelet factor 4 and .beta.-thromboglobulin, both being proteins of the platelet .alpha. granule, did not cross-react in the radioimmunoassay for PDGF. The radioimmunoassay was utilized to examine the immunol. relation between PDGF and some other growth factors. The anionic growth factors previously demonstrated in platelets were antigenically distinct from cationic PDGF. Similar results were obtained with epidermal growth factor (EGF) of fibroblast growth factor (FGF). In contrast, osteosarcoma-derived growth factor showed some cross-reactivity in the radioimmunoassay for PDGF. Apparently, osteosarcoma-derived growth factor (
\*\*\*ODGF\*\*\* ) has both phys.-chem. and immunol. properties in common with PDGF.

**DUPLICATE 2** 

L20 ANSWER 3 OF 3 MEDLINE AN 81117511 MEDLINE

TI Chemical and biological properties of a growth factor from

human-cultured osteosarcoma cells: resemblance with platelet-derived growth factor

Heldin C H; Westermark B; Wasteson A

SO JOURNAL OF CELLULAR PHYSIOLOGY, (1980 Nov) 105 (2) 235-46. Journal code: HNB. ISSN: 0021-9541.

DT Journal; Article; (JOURNAL ARTICLE) LA English

FS Priority Journals

FM 8108 AB A human osteosarcoma cell line, U-2 OS, cultured under serum-free conditions, was shown to produce a growth factor (osteosarcoma-derived growth factor, "\*\*ODGF\*\*\*) for human-cultured glial cells, fibroblasts, and other cells.

\*\*\*ODGF\*\*\*, collected from the spent medium of 2 OS cultures, was purified by a sequence involving heparin-Sepharose chromatography, hydrophobic chromatography, gel chromatography, and preparative gel electrophresis in SDS. Purified \*\*\*\*ODGF\*\*\*, at a concentration of 3 ng/ml, elicited a mitogenic response in human glial cells equivalent to 50% of that afforded by human serum at a final concentration of 1%. The preparation was estimated to be > 50% pure. The biological activity of \*\*\*ODGF\*\*\* resided in a cationic, relatively heat-resistant, reduction-susceptible protein with a molecular weight of 30,000 (by gel chromatography and SDS-gel electrophoresis). The electrophoretic behaviour of radioiodinated "\*\*ODGF\*\*\* suggested that the protein was composed of two different polypeptide chains (about 13,000-14,00 and 16,000-17,000 daltons, respectively) linke via disulphide bonds. The molecular makeup of "\*ODGF\*\*\* was thus similar to that of platelet-derived growth factor. 125I- \*\*\*ODGF\*\*\* could be precipitated by an antibody to platelet-derived growth factor, indicating that the two factors were immunologically related.

Resemblance with platelet-derived growth factor was also indicated by the finding that the latter (but not, e.g., fibroblast growth

factor or epidermal growth factor) competed with 125I- \*\*\*ODGF\*\*\*

for binding to human-cultured glial cells.